

10/685435

L1 FILE 'REGISTRY' ENTERED AT 15:53:12 ON 12 NOV 2004  
70 SEA ABB=ON PLU=ON SIYPGHITGHRMAWDMMNWSPTTALVVSQLLRI/SQSP

L2 FILE 'CAPLUS' ENTERED AT 15:54:06 ON 12 NOV 2004  
9 SEA ABB=ON PLU=ON L1

L2 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN  
ED Entered STN: 19 May 2004  
ACCESSION NUMBER: 2004:402741 CAPLUS  
DOCUMENT NUMBER: 140:373891  
TITLE: Recombinant hepatitis C virus E1 and E2 envelope proteins for diagnostic and therapeutic use  
INVENTOR(S): Maertens, Geert; Bosman, Fons; Buyse, Marie Ange  
PATENT ASSIGNEE(S): Belg.  
SOURCE: U.S. Pat. Appl. Publ., 162 pp., Cont.--in-part of U.S. Ser. No. 355,040.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 6  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003118603	A1	20030626	US 2001-995860	20011129
WO 9967285	A1	19991229	WO 1999-EP4342	19990623
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6635257	B1	20031021	US 1999-355040	19990723
ZA 2000007318	A	20030310	ZA 2000-7318	20001208
US 2003147918	A1	20030807	US 2001-995791	20011129
TR 200202169	T1	20040621	TR 2002-200202169	20020111
ZA 2002007272	A	20040213	ZA 2002-7272	20020910

PRIORITY APPLN. INFO.:  
EP 1998-870142 A 19980624  
EP 1999-870033 A 19990222  
WO 1999-EP4342 W 19990623  
US 1999-355040 A2 19990723  
US 2000-304194P P 20001201  
US 2001-260669P P 20010111  
US 2001-315768P P 20010830

AB The present invention relates to a method for purifying recombinant HCV single or specific oligomeric envelope proteins selected from the group consisting of E1 and/or E2 and/or E1/E2, characterized in that upon lysing the transformed host cells to isolate the recombinantly expressed protein a disulfide bond cleavage or reduction step is carried out with a disulfide bond cleavage agent. The present invention also relates to a composition isolated by such a method. The present invention also relates to the diagnostic and therapeutic application of these compns. Furthermore, the invention relates to the use of HCV E1 protein and peptides for prognosing

and monitoring the clin. effectiveness and/or clin. outcome of HCV treatment.

IT 684311-15-7P 684311-17-9P 684311-27-1P  
684311-31-7P 684311-33-9P 684311-51-1P  
684311-53-3P

RL: ARU (Analytical role, unclassified); BPN (Biosynthetic preparation);  
BSU (Biological study, unclassified); DGN (Diagnostic use); PRP  
(Properties); THU (Therapeutic use); ANST (Analytical study); BIOL  
(Biological study); PREP (Preparation); USES (Uses)

(amino acid sequence; recombinant hepatitis C virus E1 and E2 envelope proteins for diagnostic and therapeutic use)

L2 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

ED Entered STN: 27 Jun 2003

ACCESSION NUMBER: 2003:491258 CAPLUS

DOCUMENT NUMBER: 139:67765

TITLE: Recombinant hepatitis C virus E1 and E2 envelope proteins for diagnostic and therapeutic use

INVENTOR(S): Maertens, Geert; Depla, Erik; Bosman, Fons

PATENT ASSIGNEE(S): Innogenetics N.V., Belg.

SOURCE: PCT Int. Appl., 270 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003051912	A2	20030626	WO 2002-EP14480	20021218
WO 2003051912	A3	20040304		
WO 2003051912	C2	20040715		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
US 2004126395	A1	20040701	US 2002-321798	20021218
EP 1461080	A2	20040929	EP 2002-796675	20021218
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK			
PRIORITY APPLN. INFO.:			US 2001-20510	A 20011218
			US 2002-418358P	P 20021016
			WO 2002-EP14480	W 20021218

AB The present invention relates to a method for purifying recombinant HCV single or specific oligomeric envelope proteins selected from the group consisting of E1 and/or E2 and/or E1/E2, characterized in that upon lysing the transformed host cells to isolate the recombinantly expressed protein a disulfide bond cleavage or reduction step is carried out with a disulfide bond cleavage agent. The present invention also relates to a composition isolated by such a method. The present invention also relates to the

diagnostic and therapeutic application of these compns. Furthermore, the invention relates to the use of HCV E1 protein and peptides for prognosing and monitoring the clin. effectiveness and/or clin. outcome of HCV treatment.

IT 548804-07-5P 548804-09-7P 548804-11-1P  
548804-12-2P 548804-21-3P 548804-22-4P  
548804-27-9P

RL: ARU (Analytical role, unclassified); BPN (Biosynthetic preparation);  
BSU (Biological study, unclassified); DGN (Diagnostic use); PRP  
(Properties); THU (Therapeutic use); ANST (Analytical study); BIOL  
(Biological study); PREP (Preparation); USES (Uses)  
(amino acid sequence; recombinant hepatitis C virus E1 and E2 envelope  
proteins for diagnostic and therapeutic use)

L2 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

ED Entered STN: 01 Nov 2002

ACCESSION NUMBER: 2002:832953 CAPLUS

DOCUMENT NUMBER: 137:348178

TITLE: Manufacture of core glycosylated hepatitis C virus  
envelope proteins as fusion proteins with avian  
lysozyme for vaccine use

INVENTOR(S): Depla, Erik; Bosman, Alfons; Deschamps, Geert; Sablon,  
Erwin; Suckow, Manfred; Samson, Isabelle; Verheyden,  
Gert

PATENT ASSIGNEE(S): Innogenetics N.V., Belg.

SOURCE: PCT Int. Appl., 355 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002086101	A2	20021031	WO 2002-BE64	20020424
WO 2002086101	A3	20040219		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
US 2003108561	A1	20030612	US 2002-128590	20020424
US 2003152940	A1	20030814	US 2002-128587	20020424
US 2003211597	A1	20031113	US 2002-128578	20020424
EP 1417298	A2	20040512	EP 2002-727059	20020424
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
PRIORITY APPLN. INFO.:			EP 2001-870088	A 20010424
			US 2001-305604P	P 20010717
			WO 2002-BE64	W 20020424

AB The current invention relates to HCV envelope proteins or parts thereof

which are the product of expression in eukaryotic cells. More particularly said HCV envelope proteins are characterized in that on average up to 80 % of their N-glycosylation sites are core-glycosylated. Of these N-glycosylated sites more than 70 % are glycosylated with an oligomannose containing 8 to 10 mannoses. Furthermore, the ratio of the oligomannoses with structure Man(7)-GlcNAc(2) over the oligomannose with structure Man(8)-GlcNAc(2) is less than or equal to 0.45. Less than 10 % of the oligomannoses is terminated with an  $\alpha$ 1,3 linked mannose. The HCV envelope proteins of the invention are particularly suited for diagnostic, prophylactic and therapeutic purposes. A suitable eukaryotic cell for production of the HCV envelope proteins of the invention is a *Hansenula* cell.

*Hansenula polymorpha* does not hyperglycosylate proteins in the way that *Saccharomyces cerevisiae* or *Pichia pastoris* does. A series of expts. with different leader sequences and expression hosts was conducted to select the combination that gave the best yield of accurately processed glycoprotein. The chicken lysozyme leader sequence and *Hansenula polymorpha* as expression gave the best yield. The proteins are manufactured as

fusion proteins with the leader peptide of an avian lysozyme and are flanked by linker and processing sites that protect the termini of the protein and that allow accurate excision. Assembly of the glycoproteins into virus-like particles for vaccination is demonstrated.

IT 474567-57-2DP, fusion products

RL: BPN (Biosynthetic preparation); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(amino acid sequence; manufacture of core glycosylated hepatitis C virus envelope proteins as fusion proteins with avian lysozyme for vaccine use)

L2 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

ED Entered STN: 01 Nov 2002

ACCESSION NUMBER: 2002:832824 CAPLUS

DOCUMENT NUMBER: 137:351491

TITLE: Production of recombinant HCV envelope proteins with expression vectors encoding avian lysozyme leader or signal peptide

INVENTOR(S): Sablon, Erwin; Van Broekhoven, Annie; Bosman, Alfons; Depla, Erik; Deschamps, Geert

PATENT ASSIGNEE(S): Innogenetics N.V., Belg.

SOURCE: PCT Int. Appl., 319 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002085932	A2	20021031	WO 2002-BE62	20020424
WO 2002085932	A3	20030313		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,				

PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,  
 UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,  
 TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,  
 CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,  
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 US 2003108561 A1 20030612 US 2002-128590 20020424  
 US 2003152940 A1 20030814 US 2002-128587 20020424  
 US 2003211597 A1 20031113 US 2002-128578 20020424  
 EP 1381671 A2 20040121 EP 2002-764023 20020424  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
 NZ 529019 A 20040528 NZ 2002-529019 20020424  
 PRIORITY APPLN. INFO.: EP 2001-870088 A 20010424  
 US 2001-305604P P 20010717  
 WO 2002-BE62 W 20020424

AB The current invention relates to vectors and methods for efficient expression of HCV envelope proteins in eukaryotic cells. More particularly said vectors comprise the coding sequence for an avian lysozyme signal peptide or a functional equivalent thereof joined to a HCV envelope protein or a part thereof. Said avian lysozyme signal peptide is efficiently removed when the protein comprising said avian lysozyme signal peptide joined to a HCV envelope protein or a part thereof is expressed in a eukaryotic cell. Suitable eukaryotic cells include yeast cells such as *Saccharomyces* or *Hansenula* cells.

IT **474565-89-4P**

RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); PRP (Properties); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (amino acid sequence; production of recombinant HCV envelope proteins with expression vectors encoding avian lysozyme leader or signal peptide)

L2 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

ED Entered STN: 19 Jul 2002

ACCESSION NUMBER: 2002:539704 CAPLUS

DOCUMENT NUMBER: 137:108289

TITLE: Purified hepatitis C virus envelope E1 and/or E2 proteins for diagnostic and therapeutic use

INVENTOR(S): Maertens, Geert; Bosman, Fons; Buyse, Marie-Ange

PATENT ASSIGNEE(S): Innogenetics N.V., Belg.

SOURCE: PCT Int. Appl., 243 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 6

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002055548	A2	20020718	WO 2002-EP219	20020111
WO 2002055548	C1	20021031		
WO 2002055548	A3	20040805		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
 CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,

LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,  
 PL, PT, RO  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,  
 CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,  
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 US 2003147918 A1 20030807 US 2001-995791 20011129  
 BR 2002003518 A 20021217 BR 2002-3518 20020111  
 TR 200202169 T1 20040621 TR 2002-200202169 20020111  
 JP 2004525885 T2 20040826 JP 2002-556616 20020111  
 EP 1463753 A2 20041006 EP 2002-704649 20020111  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
 NO 2002004325 A 20021111 NO 2002-4325 20020910  
 ZA 2002007272 A 20040213 ZA 2002-7272 20020910  
 PRIORITY APPLN. INFO.: US 2000-304194P P 20001201  
 US 2001-260669P P 20010111  
 US 2001-260669P A 20010111  
 US 2001-315768P P 20010830  
 WO 2002-EP219 W 20020111

AB The present invention relates to a method for purifying recombinant HCV single or specific oligomeric envelope proteins selected from the group consisting of E1 and/or E2 and/or E1/E2, characterized in that upon lysing the transformed host cells to isolate the recombinantly expressed protein a disulfide bond cleavage or reduction step is carried out with a disulfide bond cleavage agent. The present invention also relates to a composition isolated by such a method. The present invention also relates to the diagnostic and therapeutic application of these compns. Furthermore, the invention relates to the use of HCV E1 protein and peptides for prognosing and monitoring the clin. effectiveness and/or clin. outcome if HCV treatment.

IT 442958-78-3P 442958-83-0P 442958-94-3P  
 442958-98-7P 442959-00-4P 442987-06-6P  
 442987-09-9P

RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified);  
 DGN (Diagnostic use); PRP (Properties); THU (Therapeutic use); BIOL  
 (Biological study); PREP (Preparation); USES (Uses)  
 (amino acid sequence; purified hepatitis C virus envelope E1 and/or E2  
 proteins for diagnostic and therapeutic use)

L2 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

ED Entered STN: 30 Dec 1999

ACCESSION NUMBER: 1999:819408 CAPLUS

DOCUMENT NUMBER: 132:77608

TITLE: Particles of HCV envelope proteins: use for  
 vaccination

INVENTOR(S): Depla, Erik; Maertens, Geert; Bosman, Alfons; Van  
 Wijnendaele, Frans

PATENT ASSIGNEE(S): Innogenetics N. V., Belg.

SOURCE: PCT Int. Appl., 105 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 6

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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Searcher : Shears 571-272-2528

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WO 9967285          A1      19991229      WO 1999-EP4342          19990623
W:  AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ,
    DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS,
    JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK,
    MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,
    TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ,
    MD, RU, TJ, TM
RW:  GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK,
    ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,
    CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
CA 2330526          AA      19991229      CA 1999-2330526          19990623
AU 9946152          A1      20000110      AU 1999-46152          19990623
AU 765940           B2      20031002
EP 1090033          A1      20010411      EP 1999-929306          19990623
R:   AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
    IE, SI, LT, LV, FI, RO
TR 200003843        T2      20010621      TR 2000-200003843      19990623
BR 9911397          A       20020115      BR 1999-11397          19990623
NZ 508797           A       20040227      NZ 1999-508797          19990623
US 6635257          B1      20031021      US 1999-355040          19990723
ZA 2000007318        A       20030310      ZA 2000-7318            20001208
US 2003095980        A1      20030522      US 2001-995808          20011129
US 2003118603        A1      20030626      US 2001-995860          20011129
US 2003202987        A1      20031030      US 2003-414219          20030416
PRIORITY APPLN. INFO.:
EP 1998-870142      A       19980624
EP 1999-870033      A       19990222
EP 1994-EP94870132  A       19940729
WO 1995-EP3031*     W       19950731
US 1996-612973      A3      19960311
US 1997-928017      B2      19970911
EP 1998-EP98870142  A       19980624
EP 1999-EP99870033  A       19990222
WO 1999-EP4342      W       19990623
US 1999-355040      W       19990723
US 2000-304194P     P       20001201
US 2001-260669P     P       20010111
US 2001-315768P     P       20010830
AB  The present invention is based on the finding that the envelope proteins
    of HCV induce a beneficial immune response in chronically HCV-infected
    chimpanzees. The immunization can preferentially be carried out using HCV
    envelope proteins in the form of particles which are produced in a
    detergent-assisted manner. The envelope proteins when presented as such
    to chronic HCV carriers are highly immunogenic and stimulate both the
    cellular and humoral immune response.
IT  224570-67-6
    RL: PRP (Properties)
        (unclaimed protein sequence; 00particles of HCV envelope proteins, use
        for vaccination)
REFERENCE COUNT:      4      THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS
                           RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2  ANSWER 7 OF 9  CAPLUS  COPYRIGHT 2004 ACS on STN
ED  Entered STN:  08 Oct 1999
ACCESSION NUMBER:      1999:640560  CAPLUS
DOCUMENT NUMBER:       131:270949

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10/685435

TITLE: Epitopes in viral envelope proteins and specific antibodies directed against these epitopes: use for detection of HCV viral antigen in host tissue

PATENT ASSIGNEE(S): Innogenetics N.V., Belg.

SOURCE: Eur. Pat. Appl., 32 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 947525	A1	19991006	EP 1998-870060	19980327
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
CA 2321179	AA	19991007	CA 1999-2321179	19990329
WO 9950301	A2	19991007	WO 1999-EP2154	19990329
WO 9950301	A3	19991125		
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9936022	A1	19991018	AU 1999-36022	19990329
AU 756495	B2	20030116		
BR 9909026	A	20001205	BR 1999-9026	19990329
TR 200002695	T2	20001221	TR 2000-200002695	19990329
EP 1064309	A2	20010103	EP 1999-917909	19990329
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002510038	T2	20020402	JP 2000-541203	19990329
NZ 506553	A	20021126	NZ 1999-506553	19990329
ZA 2000004383	A	20021125	ZA 2000-4383	20000824
US 6521403	B1	20030218	US 2000-645470	20000824
US 2003129746	A1	20030710	US 2002-318200	20021213
PRIORITY APPLN. INFO.:			EP 1998-870060	A 19980327
			WO 1999-EP2154	W 19990329
			US 2000-645470	A3 20000824

AB Antibodies to two new epitopes on the HCV envelope proteins were identified which allow routine detection of native HCV envelope antigens, in tissue or cells derived from the host. The new epitopes are: the E1 region aa 307-326 and the N-terminal hyper variable region of E2 aa 395-415. Surprisingly, we characterized an antibody which reacts with various sequences of the hypervariable domain of E2. Specific monoclonal antibodies directed against these epitopes and allowing routine detection of viral antigen are described.

IT 224570-67-6

RL: PRP (Properties)

(unclaimed protein sequence; epitopes in viral envelope proteins and specific antibodies directed against these epitopes, use for detection of HCV viral antigen in host tissue)

Searcher : Shears 571-272-2528



10/685435

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN  
 ED Entered STN: 27 May 1999  
 ACCESSION NUMBER: 1999:325967 CAPLUS  
 DOCUMENT NUMBER: 130:351222  
 TITLE: Peptides derived from hepatitis C virus envelope proteins for diagnosis and vaccination  
 INVENTOR(S): Maertens, Geert; Depla, Erik  
 PATENT ASSIGNEE(S): Innogenetics N.V., Belg.  
 SOURCE: PCT Int. Appl., 50 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9924466	A2	19990520	WO 1998-EP7105	19981106
WO 9924466	A3	19990715		
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2305847	AA	19990520	CA 1998-2305847	19981106
AU 9915609	A1	19990531	AU 1999-15609	19981106
AU 752131	B2	20020905		
EP 1028972	A2	20000823	EP 1998-959858	19981106
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001522599	T2	20011120	JP 2000-520474	19981106
US 2004126754	A1	20040701	US 2003-685435	20031016
PRIORITY APPLN. INFO.:				
			EP 1997-870179	A 19971106
			WO 1998-EP7105	W 19981106
			US 2000-566266	A3 20000505
AB The authors disclose that multimer peptides (e.g., 30- to 45-mer peptides) derived from hepatitis C virus envelope proteins, in contrast to shorter peptides produced in E. coli, react with the majority of anti-HCV antibodies present in patient sera. In addition, the authors disclose a peptide from the E1 protein of hepatitis G virus that reacts with antibodies from hepatitis C sera. The peptides may be useful for diagnosis of, and to vaccinate against, an infection with hepatitis C virus.				
IT 224570-67-6				
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)				
(of E1 protein of hepatitis C virus in relation to diagnosis and therapy)				

L2 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

ED Entered STN: 11 Dec 1993

ACCESSION NUMBER: 1993:642928 CAPLUS

DOCUMENT NUMBER: 119:242928

TITLE: Epitopes of polyprotein of hepatitis C virus, and their uses

INVENTOR(S): Chien, David Y.; Rutter, William

PATENT ASSIGNEE(S): Chiron Corp., USA

SOURCE: PCT Int. Appl., 79 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9300365	A2	19930107	WO 1992-US5388	19920624
WO 9300365	A3	19930429		
W: AU, BG, CA, FI, HU, JP, KR, NO, PL, RO, RU				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE				
CA 2110058	AA	19930107	CA 1992-2110058	19920624
CA 2110058	C	20010925		
AU 9223053	A1	19930125	AU 1992-23053	19920624
AU 671594	B2	19960905		
EP 591431	A1	19940413	EP 1992-914835	19920624
EP 591431	B1	20021211		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, MC, NL, SE				
JP 06508837	T2	19941006	JP 1993-501671	19920624
JP 3516681	B2	20040405		
HU 73098	A2	19960628	HU 1993-3703	19920624
RU 2148587	C1	20000510	RU 1993-58563	19920624
JP 2000139485	A2	20000523	JP 1999-335167	19920624
JP 3514680	B2	20040331		
RO 117329	B1	20020130	RO 1993-1778	19920624
AT 229543	E	20021215	AT 1992-914835	19920624
ES 2188583	T3	20030701	ES 1992-914835	19920624
JP 2003277396	A2	20031002	JP 2003-54819	19920624
JP 3514751	B2	20040331		
NO 9304542	A	19940210	NO 1993-4542	19931210
US 6346375	B1	20020212	US 1995-403590	19950314
US 6150087	A	20001121	US 1995-444818	19950518
FI 2002001626	A	20020911	FI 2002-1626	20020911
JP 2004115533	A2	20040415	JP 2003-385979	20031114
PRIORITY APPLN. INFO.:			US 1991-722489	A 19910624
			JP 1993-501671	A3 19920624
			JP 1999-335167	A3 19920624
			JP 2003-54819	A3 19920624
			WO 1992-US5388	A 19920624
			US 1995-403590	A3 19950314

AB The hepatitis C virus 1 (HCV-1) polyprotein epitopes amino acidx-amino acid (x and y = positions of the amino acids in the polyprotein; x and y are integers and y-x ≥ 6), antibodies to these peptides, and use of these peptides in immunoassays or as vaccines are claimed. Octamers derived from the polyprotein sequence were synthesized and subjected to an epitope mapping experiment by reacting with three antisera selected from 3

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patients infected with HCV to select epitopes that react with all three antisera. Also given was the determination of early and late antigens by the differential assay for use in early diagnosis of hepatitis C virus. The sequence variations in HCV isolated from different individuals were given.

IT 147479-35-4, Protein (hepatitis C virus strain Japan envelope fragment reduced)

RL: PRP (Properties)  
(amino acid sequence of)

E57 THROUGH E81 ASSIGNED

FILE 'REGISTRY' ENTERED AT 15:54:42 ON 12 NOV 2004

L3 25 SEA FILE=REGISTRY ABB=ON PLU=ON (224570-67-6/BI OR 147479-35-4/BI OR 442958-78-3/BI OR 442958-83-0/BI OR 442958-94-3/BI OR 442958-98-7/BI OR 442959-00-4/BI OR 442987-06-6/BI OR 442987-09-9/BI OR 474565-89-4/BI OR 474567-57-2/BI OR 548804-07-5/BI OR 548804-09-7/BI OR 548804-11-1/BI OR 548804-12-2/BI OR 548804-21-3/BI OR 548804-22-4/BI OR 548804-27-9/BI OR 684311-15-7/BI OR 684311-17-9/BI OR 684311-27-1/BI OR 684311-31-7/BI OR 684311-33-9/BI OR 684311-51-1/BI OR 684311-53-3/BI)

L4 25 L1 AND L3

L4 ANSWER 1 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN

RN 684311-53-3 REGISTRY

CN Envelope protein E2 (hepatitis C virus clone HCCL66) (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 50: PN: US030118603 SEQID: 50 claimed protein

CI MAN

SQL 809

SEQ 1 MSTNPKPQRK TKRNTNRRPQ DVKFPGGGQI VGGVYLLPRR GPRLGVRATR  
51 KTSERSQPRG RRQPIPKARR PEGRAWAQPQ YPWPLYGNEG MGWAGWLLSP  
101 RGSRPSWGPT DPRRRSRNLG KVIDTLTCGF ADLVGYIPLV GAPLGGAARA  
151 LAHGVRVLED GVNYATGNLP GCSFSIFLLA LLSCLTVPAS AYEVRNVSGM  
201 YHVTNDCSNS SIVYEAADMI MHTPGCVPCV RENNSSRCWV ALTPTLAARN  
251 ASVPTTTIRR HVDLLVGAAA FCSAMYVGDL CGSVFLVSQL FTISPRRHET  
301 VQDCNCISIYP GHITGHRMAW DMMNWSPTT ALVVSQLLRI PQAVVDMVAG  
=====

351 AHWGVLAGLA YYSMVGNWAK VLVVMLLFAG VDGHTRVSGG AAASDTRGLV  
401 SLFSPGSAQK IQLVNTNGSW HINRTALNCN DSLQTGFFAA LFYKHKFNSS  
451 GCPERLASCR SIDKFAQGWG PLTYTEPNSS DQRPYCWHYA PRPCGIVPAS  
501 QVCGPVYCFE PSPVVVGTTD RFGVPTYNWG ANDSDVLILN NTRPPRGWFW  
551 GCTWMNGTGF TKTCGGPPCN IGGAGNNTLT CPTDCFRKHP EATYARCGSG  
601 PWTTPRCMVH YPYRLWHYPC TVNFTIFKVR MYVGGVEHRF EAACNWTGRG  
651 RCDLEDNRDS ELSPLLLST EWQILPCSFT TLPALSTGLI HLHQNIVDVQ  
701 YLYGVGSAVV SLVIKWEYVL LLFLLLADAR ICACLWMMMLL IAQAEAALEN  
751 LVVLNAAAVA GAHGTLSFLV FFCAAWYIKG RLVPGAAYAF YGVWPLLLLLL  
801 LALPPRAYA

HITS AT: 307-340

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

Searcher : Shears 571-272-2528

10/685435

REFERENCE 1: 140:373891

L4 ANSWER 2 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 684311-51-1 REGISTRY  
CN Envelope protein E2 (hepatitis C virus clone HCCL65) (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 48: PN: US030118603 SEQID: 48 claimed protein  
CI MAN  
SQL 692

SEQ 1 NLGKVIDTLT CGFADLVGYI PLVGAPLGGA ARALAHGVRV LEDGVNYATG  
51 NLPGCSFSIF LLALLSCLTV PASAYEVRNV SGMVHTNDNC SNSSIVYEAA  
101 DMIMHTPGCV PCVRENNSSR CWALTPTLA ARNASVPTTT IRRHVDLLVG  
151 AAAFCSAMYV GDLGGSVFLV SQLFTISPRR HETVQDCNCS IYPGHITGHR  
=====

201 MAWDMMMNWS PTTALVVSQ LRPQAVVDM VAGAHWGVLA GLAYYSMVGN  
=====

251 WAKVLVVMLL FAGVDGHRV SGGAAASDTR GLVSLFSPGS AQKIQLVNTN  
301 GSWHINRTAL NCNDSLQTFG FAALFYKHKF NSSGCPERLA SCRSIDKFAQ  
351 GWGPLTYTEP NSSDQRPYCW HYAPRPCGIV PASQVCGPVY CFTPSPVVVG  
401 TTDRFGVPTY NWGANDSDVL ILNNTRPARG NWFGCTWMNG TGFTKTCGGP  
451 PCNIGGAGNN TLTCPTDCFR KHPEATYARC GSGPWLTPRC MVHYPYRLWH  
501 YPCTVNFTIF KVRMYVGGVE HRFEAACNWT RGERCDLEDR DRSELSPLLL  
551 STTEWQILPC SFTTLPALST GLIHLHQIV DVQYLYGVGS AVVSLVIKWE  
601 YVLLLFLLLA DARICACLWM MLLIAQAEA LENLVVLNAA AVAGAHGTLN  
651 FLVFFCAAWY IKGRLVPGAA YAFYGVWPLL LLLLALPPRA YA

HITS AT: 190-223

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 140:373891

L4 ANSWER 3 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 684311-33-9 REGISTRY  
CN Envelope protein E1 (hepatitis C virus clone HCCL40) (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 28: PN: US030118603 SEQID: 28 claimed protein  
CI MAN  
SQL 210

SEQ 1 MLGKVIDTLT CGFADLVGYI PLVGAPLGGA ARALAHGVRV LEDGVNYATG  
51 NLPGCSFSIF LLALLSCLTV PASAYEVRNV SGMVHTNDNC SNSSIVYEAA  
101 DMIMHTPGCV PCVRENNSSR CWALTPTLA ARNASVPTTT IRRHVDLQF  
151 TISPRRHETV QDCNCSIYPG HITGHRMAWD MMMNWSPTTA LVVSQLLRIV  
=====

201 IEGRHHHHHH

HITS AT: 166-199

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 140:373891

L4 ANSWER 4 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 684311-31-7 REGISTRY

10/685435

CN Envelope protein E1 (hepatitis C virus clone HCCL39) (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 26: PN: US030118603 SEQID: 26 claimed protein

CI MAN

SQL 200

SEQ 1 MLGKVIDTLT CGFADLVGYI PLVGAPLGGG ARALAHGVRV LEDGVNYATG  
51 NLPGCSFSIF LLALLSCLTV PASAYEVRNV SGMVHVTNDC SNSSIVYEAA  
101 DMIMHTPGCV PCVRENNSSR CWVALTPTLA ARNASVPTTT IRRHVDSQLF  
151 TISPRRHETV QDCNCSIYPG HITGHRMAWD MMMNWSPTTA LVVSQLLRIL  
=====

HITS AT: 166-199

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 140:373891

L4 ANSWER 5 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN

RN 684311-27-1 REGISTRY

CN Envelope protein E1 (hepatitis C virus clone HCCL37) (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 22: PN: US030118603 SEQID: 22 claimed protein

CI MAN

SQL 239

SEQ 1 MLGKVIDTLT CGFADLVGYI PLVGAPLGGG ARALAHGVRV LEDGVNYATG  
51 NLPGCSFSIF LLALLSCLTV PASAYEVRNV SGMVHVTNDC SNSSIVYEAA  
101 DMIMHTPGCV PCVRENNSSR CWVALTPTLA ARNASVPTTT IRRHVDSQLF  
151 TISPRRHETV QDCNCSIYPG HITGHRMAWD MMMNWSPTTA LVVSQLLRIP  
=====

201 QAVVDMVAGA HWGVLAGLAY YSMVGNWAKV LIVMLLFAP

HITS AT: 166-199

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 140:373891

L4 ANSWER 6 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN

RN 684311-17-9 REGISTRY

CN Envelope protein E1 (hepatitis C virus clone HCCL10A) (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 6: PN: US030118603 SEQID: 6 claimed protein

CI MAN

SQL 263

SEQ 1 MLGKVIDTLT CGFADLVGYI PLVGAPLGGG ARALAHGVRV LEDGVNYATG  
51 NLPGCSFSIF LLALLSCLTV PASAYEVRNV SGMVHVTNDC SNSSIVYEAA  
101 DMIMHTPGCV PCVRENNSSR CWVALTPTLA ARNASVPTTT IRRHVDLLVG  
151 AAAFCSAMYV GDLCGSVFLV SQLFTISPRR HETVQDCNCS IYPGHITGHR  
=====

201 MAWDMMMNWS PTTALVVSQ L RIPQAVVDM VAGAHWGVLA GLAYYSMVGN  
=====

251 WAKVLIVMLL FAP

Searcher : Shears 571-272-2528

10/685435

HITS AT: 190-223

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 140:373891

L4 ANSWER 7 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN

RN 684311-15-7 REGISTRY

CN Envelope protein E1 (hepatitis C virus clone HCCL9A) (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 4: PN: US030118603 SEQID: 4 claimed protein

CI MAN

SQL 212

```
SEQ      1 MPGCSFSIFL LALLSCLTIP ASAYEVRNVS GMYHVTNDCS NSSIVYEAAD
      51 MIMHTPGCVP CVRENNSSRC WVALTPTLAA RNASVPTTTI RRHVDLLVGA
     101 AALCSAMYVG DLGCGSVFLVS QLFTISPRRH ETVQDCNC SI YPGHITGHRM
                                     == =====
      151 AWDMMMNWSP TTALVVSQLL RIPQAVVDMV AGAHWGVLAG LAYYSMVGNW
      =====
      201 AKVLIVMLLF AL
```

HITS AT: 139-172

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 140:373891

L4 ANSWER 8 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN

RN 548804-27-9 REGISTRY

CN Envelope protein E1 (hepatitis C virus clone HCCL10A) (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 6: PN: WO03051912 SEQID: 6 claimed protein

CI MAN

SQL 263

```
SEQ      1 MLGKVIDTLT CGFADLVGYI PLVGAPLGGA ARALAHGVRV LEDGVNYATG
      51 NLPGCSFSIF LLALLSCLTV PASAYEVRNV SGMHVTNDC SNSSIVYEAA
     101 DMIMHTPGCV PCVRENNSSR CWVALTPTLA ARNASVPTTT IRRHVDLLVG
     151 AAAFCSAMYV GDLCGSVFLV SQLFTISPRR HETVQDCNCS IYPGHITGHR
                                     = =====
      201 MAWDMMNWS PTTALVVSQLL LRIPQAVVDM VAGAHWGVLA GLAYYSMVGN
      =====
      251 WAKVLIVMLL FAP
```

HITS AT: 190-223

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 139:67765

L4 ANSWER 9 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN

RN 548804-22-4 REGISTRY

CN Envelope protein E2 (hepatitis C virus clone HCCL66) (9CI) (CA INDEX NAME)

OTHER NAMES:

Searcher : Shears 571-272-2528

10/685435

CN 50: PN: WO03051912 SEQID: 50 claimed protein  
CI MAN  
SQL 809

SEQ 1 MSTNPKPQRK TKRNTNRRPQ DVKFPGGGQI VGGVYLLPRR GPRLGVRATR  
51 KTSERSQPRG RRQPIPKARR PEGRAWAQPQ YPWPLYGNEG MGWAGWLLSP  
101 RGSRPSWGPT DPRRRSRNLG KVIDTLTCGF ADLVGYIPLV GAPLGGAARA  
151 LAHGVRVLED GVNYATGNLP GCSFSIFLLA LLSCLTVPAS AYEVRNVSGM  
201 YHVTNDCSNS SIVYEAADMI MHTPGCVPCV RENNSSRCWV ALTPTLAARN  
251 ASVPTTTIRR HVDLLVGAAA FCSAMYVGD L CGSVFLVSQL FTISPRRHET  
301 VQDCNC SIYP GHITGHRMAW DMMMNWSPTT ALVVSQ L LRI PQAVVDMVAG  
=====

351 AHWGVLAGLA YYS MVGNWAK VLVVMLLFAG VDGHTRVSGG AAASDTRGLV  
401 SLFSPGSAQK IQLVNTNGSW HINRTALNCN DSLQTGFFAA LFYKHKFNSS  
451 GCPERLASCR SIDKFAQGWG PLTYTEPNSS DQRPYCWHYA PRPCGIVPAS  
501 QVCGPVYCF T PSPVVVGTTD RFGVPTYNWG ANDSDVLILN NTRPPRGWFW  
551 GCTWMNGTGF TKTCGGPPCN IGGAGNNTLT CPTDCFRKHP EATYARCGSG  
601 PWLTPRCMVH YPYRLWHYPC TVNFTIFKVR MYVGGVEHRF EAACNWT RGE  
651 RCDLED RDRS ELSPLLLSTT EWQILPCSFT TLPALSTGLI HLHQNIVDVQ  
701 YLYGVGSAVV SLVIKWEYVL LLFLLLLADAR ICACLWMLL IAQAEAALEN  
751 LVVLNAAAVA GAHGTLSFLV FFCAAWYIKG RLVPGAAYAF YGVWPLLLLL  
801 LALPPRAYA

HITS AT: 307-340

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 139:67765

L4 ANSWER 10 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 548804-21-3 REGISTRY  
CN Envelope protein E2 (hepatitis C virus clone HCCL65) (9CI) (CA INDEX  
NAME)  
OTHER NAMES:  
CN 48: PN: WO03051912 SEQID: 48 claimed protein  
CI MAN  
SQL 692

SEQ 1 NLGKVIDTLT CGFADLVGYI PLVGAPLGGA ARALAHGVRV LEDGVNYATG  
51 NLPGCSFSIF LLALLSCLTV PASAYEVRNV SGMVHTNDC SNSSIVYEA  
101 DMIMHTPGCV PCVRENNSSR CWVALTPTLA ARNASVPTTT IRRHVDLLVG  
151 AA AFCSAMYV GDLCGSVFLV SQLFTISPRR HETVQDCNCS IYPGHITGHR  
=====

201 MAWDMMNWS PTTALVVSQ L LRIPQAVVDM VAGAHWGVLA GLAYYS MVGN  
=====

251 WAKVLVVM L FAGVDGHRV SGGAAASDTR GLVSLFSPGS AQKIQLVNTN  
301 GSWHINRTAL NCNDSLQTGF FAALFYKHKF NSSGCPERLA SCRSIDKFAQ  
351 GWGPLTYTEP NSSDQRPYC W HYAPRPCGIV PASQVCGPVY CFTPSPVVVG  
401 TTDRFGVPTY NWGANDSDVL ILNNTRPPRG NWFGCTWMNG TGFTKTCGGP  
451 PCNIGGAGN TLTCPTDCFR KHPEATYARC GSGPWLT PRC MVHYPYRLWH  
501 YPCTVNFTIF KVRMYVGGVE HRFEAACNWT RGERCDLEDR DRSELSPLLL  
551 STTEWQILPC SFTTLPALST GLIHLHQNIV DVQYLYGVGS AVVSLVIKWE  
601 YVLLLFLLLA DARICACLWM MLLIAQAEAA LENLVVLNAA AVAGAHGTLS  
651 FLVFFCAAWY IKGR LVP GAA YAFYGVWPLL LLLLALPPRA YA

HITS AT: 190-223

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

Searcher : Shears 571-272-2528

10/685435

REFERENCE 1: 139:67765

L4 ANSWER 11 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 548804-12-2 REGISTRY  
CN Envelope protein E1 (hepatitis C virus clone HCCL40) (9CI) (CA INDEX  
NAME)

OTHER NAMES:

CN 28: PN: WO03051912 SEQID: 28 claimed protein  
CI MAN  
SQL 210

SEQ 1 MLGKVIDTLT CGFADLVGYI PLVGAPLGGA ARALAHGVRV LEDGVNYATG  
51 NLPGCSFSIF LLALLSCLTV PASAYEVRNV SGMHVNTDC SNSSIVYEA  
101 DMIMHTPGCV PCVRENNSSR CWALTPTLA ARNASVPTTT IRRHVDSQLF  
151 TISPRRHETV QDCNCSIYPG HITGHRMAWD MMMNWSPTTA LVVSQLLRIV  
=====

201 IEGRHHHHHH

HITS AT: 166-199

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 139:67765

L4 ANSWER 12 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 548804-11-1 REGISTRY  
CN Envelope protein E1 (hepatitis C virus clone HCCL39) (9CI) (CA INDEX  
NAME)

OTHER NAMES:

CN 26: PN: WO03051912 SEQID: 26 claimed protein  
CI MAN  
SQL 200

SEQ 1 MLGKVIDTLT CGFADLVGYI PLVGAPLGGA ARALAHGVRV LEDGVNYATG  
51 NLPGCSFSIF LLALLSCLTV PASAYEVRNV SGMHVNTDC SNSSIVYEA  
101 DMIMHTPGCV PCVRENNSSR CWALTPTLA ARNASVPTTT IRRHVDSQLF  
151 TISPRRHETV QDCNCSIYPG HITGHRMAWD MMMNWSPTTA LVVSQLLRIL  
=====

HITS AT: 166-199

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 139:67765

L4 ANSWER 13 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 548804-09-7 REGISTRY  
CN Envelope protein E1 (hepatitis C virus clone HCCL37) (9CI) (CA INDEX  
NAME)

OTHER NAMES:

CN 22: PN: WO03051912 SEQID: 22 claimed protein  
CI MAN  
SQL 239

SEQ 1 MLGKVIDTLT CGFADLVGYI PLVGAPLGGA ARALAHGVRV LEDGVNYATG  
51 NLPGCSFSIF LLALLSCLTV PASAYEVRNV SGMHVNTDC SNSSIVYEA  
101 DMIMHTPGCV PCVRENNSSR CWALTPTLA ARNASVPTTT IRRHVDSQLF

Searcher : Shears 571-272-2528



10/685435

151 TISPRRHETV QDCNCSIYPG HITGHRMAWD MMMNWSPTTA LVVSQLLRIP  
=====

201 QAVVDMVAGA HWGVLAGLAY YSMVGNWAKV LIVMLLFAP

HITS AT: 166-199

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 139:67765

L4 ANSWER 14 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 548804-07-5 REGISTRY  
CN Envelope protein E1 (hepatitis C virus clone HCCL9A) (9CI) (CA INDEX  
NAME)  
OTHER NAMES:  
CN 4: PN: WO03051912 SEQID: 4 claimed protein  
CI MAN  
SQL 212

SEQ 1 MPGCSFSIFL LALLSCLTIP ASAYEVRNVS GMYHVTNDCS NSSIVYEAAD  
51 MIMHTPGCVP CVRENNSSRC WVALTPTLAA RNASVPTTTI RRHVDLLVGA  
101 AALCSAMYVG DLGGSVFLVS QLFTISPRRH ETVQDCNC SI YPGHITGHRM  
=====

151 AWDMMMWNWSP TTALVVSQLL RIPQAVVDMV AGAHWGVLAG LAYYSMVGNW  
=====

201 AKVLIVMLLF AL

HITS AT: 139-172

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 139:67765

L4 ANSWER 15 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 474567-57-2 REGISTRY  
CN Glycoprotein E1 (hepatitis C virus 192-amino acid fragment) (9CI) (CA  
INDEX NAME)  
OTHER NAMES:  
CN 70: PN: WO02086101 SEQID: 87 claimed protein  
CI MAN  
SQL 192

SEQ 1 YEVRNVSGMY HVTNDCSNSS IVYEAADMIM HTPGCVPCVR ENNSSRCWVA  
51 LTPTLAARNA SVPTTTIRRH VDLLVGAAAF CSAMYVGDLG GSVFLVSQLF  
101 TISPRRHETV QDCNCSIYPG HITGHRMAWD MMMNWSPTTA LVVSQLLRIP  
=====

151 QAVVDMVAGA HWGVLAGLAY YSMVGNWAKV LVMMLLFAGV DG

HITS AT: 116-149

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 137:348178

L4 ANSWER 16 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 474565-89-4 REGISTRY  
CN E glycoprotein (hepatitis C virus clone WO02/085932A2SeqID87) (9CI) (CA  
INDEX NAME)  
OTHER NAMES:

Searcher : Shears 571-272-2528

10/685435

CN 87: PN: WO02085932 SEQID: 87 claimed protein  
CI MAN  
SQL 192

SEQ 1 YEVRNVSGMY HVTNDCSNSS IVYEAADMIM HTPGCVPCVR ENNSSRCWVA  
51 LTPTLAARNA SVPTTTIRRH VDLLVGAAAF CSAMYVGDLG GSVFLVSQLF  
101 TISPRRHETV QDCNCSIYPG HITGHRMAWD MMMNWSPTTA LVVSQLLRIP  
=====

151 QAVVDMVAGA HWGVLAGLAY YSMVGNWAKV LVVMLLFAGV DG  
HITS AT: 116-149

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 137:351491

L4 ANSWER 17 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN  
RN **442987-09-9** REGISTRY  
CN Core protein (hepatitis C virus clone HCC/66) fusion protein with E1  
protein (hepatitis C virus clone HCC/66) fusion protein with E2 protein  
(hepatitis C virus clone HCC/66) (9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN 51: PN: WO02055548 SEQID: 50 claimed protein  
CI MAN  
SQL 809

SEQ 1 MSTNPKPQRK TKRNTNRRPQ DVKFPGGGQI VGGVYLLPRR GPRLGVRATR  
51 KTSERSQPRG RRQPIPKARR PEGRAWAQPQ YPWPLYGNEG MGWAGWLLSP  
101 RGSRPSWGPT DPRRRSRNLG KVIDTLTCGF ADLVGYIPLV GAPLGGAARA  
151 LAHGVRVLED GVNYATGNLP GCSFSIFLLA LLSCLTVPAS AYEVRNVSGM  
201 YHVTNDCSNS SIVYEAADMI MHTPGCVPCV RENNSSRCWV ALTPTLAARN  
251 ASVPTTTIRR HVDLLVGAAA FCSAMYVDL CGSVFLVSQ LFTISPRRHET  
301 VQDCNCSIYP GHITGHRMAW DMMNWSPTT ALVVSQLLRI PQAVVDMVAG  
=====

351 AHWGVLAGLA YYSMVGNWAK VLVVMMLFAG VDGHTRVSGG AAASDTRGLV  
401 SLFSPGSAQK IQLVNTNGSW HINRTALNCN DSLQTGFFAA LFYKHKFNSS  
451 GCPERLASCR SIDKFAQGWG PLTYTEPNSS DQRPYCWHYA PRPCGIVPAS  
501 QVCGPVYCF TSPVVGTTD RFGVPTYNWG ANDSDVLILN NTRPPRGWFW  
551 GCTWMNGTGF TKTCGGPPCN IGGAGNNTLT CPTDCFRKHP EATYARCGSG  
601 PWLTPRCMVH YPYRLWHYPC TVNFTIFKVR MYVGGVEHRF EAACNWTGRG  
651 RCDLEDRDRS ELSPLLLSTT EWQILPCSFT TLPALSTGLI HLHQNIVDVQ  
701 YLYGVGSAVV SLVIKWEYVL LLFLLADAR ICACLWMLL IAQAEAALEN  
751 LVVLNAAVA GAHGTLSFLV FFCAAWYIKG RLVPGAAYAF YGVWPLLLLL  
801 LALPPRAYA  
HITS AT: 307-340

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 137:108289

L4 ANSWER 18 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN  
RN **442987-06-6** REGISTRY  
CN E1 protein (hepatitis C virus clone HCC/65) fusion protein with E2 protein  
(hepatitis C virus clone HCC/65) (9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN 48: PN: WO02055548 SEQID: 47 claimed protein  
CI MAN

SQL 692

```

SEQ      1 NLGKVIDTLT CGFADLVGYI PLVGAPLGGA ARALAHGVRV LEDGVNYATG
      51 NLPGCSFSIF LLALLSCLTV PASAYEVRNV SGMVHTNDNC SNSSIVYEAA
     101 DMIMHTPGCV PCVRENNSSR CWVALTPTLA ARNASVPTTT IRRHVDLLVG
     151 AAAFCSAMYV GDLCGSVFLV SQLFTISPRR HETVQDCNCS IYPGHITGHR
           = =====
     201 MAWDMMMNWS PTTALVVSQ L RLPQAVVDM VAGAHWGVLA GLAYYSMVGN
           =====
     251 WAKVLVVMLL FAGVDGHRV SGGAAASDTR GLVSLFSPGS AQKIQLVNTN
     301 GSWHINRTAL NCNDSLQTFG FAALFYKHKF NSSGCPERLA SCRSIDKFAQ
     351 GWGPLYTEP NSSDQRPYCW HYAPRPCGIV PASQVCGPVY CFTSPVWVG
     401 TTDRFGVPTY NWGANDSDVL ILNNTRPGRG NWFGCTWMNG TGFTKTCGGP
     451 PCNIGGAGNN TLTCPTDCFR KHPEATYARC GSGPWLTPRC MVHYPYRLWH
     501 YPCTVNFTIF KVRMYVGGVE HRFEAACNWT RGERCDLEDR DRSELSPLLL
     551 STTEWQILPC SFTTLPALST GLIHLHQNIV DVQYLYGVGS AVVSLVIKWE
     601 YVLLLFLLLA DARICACLWM MLLIAQAEAA LENLVVLNAA AVAGAHGTLS
     651 FLVFFCAAWY IKGRLVPGAA YAFYGVWPLL LLLLALPPRA YA

```

HITS AT: 190-223

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 137:108289

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L4  ANSWER 19 OF 25  REGISTRY  COPYRIGHT 2004 ACS on STN
RN  442959-00-4  REGISTRY
CN  E1 protein (hepatitis C virus clone HCC/40 isoform) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN  28: PN: WO02055548 SEQID: 28 claimed protein
CN  E1 protein (hepatitis C virus clone HCC/40 hydrophobic region deletion
      mutant)
CI  MAN
SQL 210

```

```

SEQ      1 MLGKVIDTLT CGFADLVGYI PLVGAPLGGA ARALAHGVRV LEDGVNYATG
      51 NLPGCSFSIF LLALLSCLTV PASAYEVRNV SGMVHTNDNC SNSSIVYEAA
     101 DMIMHTPGCV PCVRENNSSR CWVALTPTLA ARNASVPTTT IRRHVDSQLF
     151 TISPRRHETV QDCNCSIYPG HITGHRMAWD MMMNWSPTTA LVVSQLLRIV
           =====

```

201 IEGRHHHHHH

HITS AT: 166-199

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 137:108289

```

L4  ANSWER 20 OF 25  REGISTRY  COPYRIGHT 2004 ACS on STN
RN  442958-98-7  REGISTRY
CN  E1 protein (hepatitis C virus clone HCC/39 isoform) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN  26: PN: WO02055548 SEQID: 26 claimed protein
CN  E1 protein (hepatitis C virus clone HCC/39 hydrophobic region deletion
      mutant)
CI  MAN
SQL 200

```

10/685435

SEQ 1 MLGKVIDTLT CGFADLVGYI PLVGAPLGGA ARALAHGVRV LEDGVNYATG  
51 NLPGCSFSIF LLALLSCLTV PASAYEVRNV SGMVHTVND C SNSSIVYEAA  
101 DMIMHTPGCV PCVRENNSSR CWVALTPTLA ARNASVPTTT IRRHVDSQLF  
151 TISPRRHETV QDCNCSIYPG HITGHRMAWD MMMNWSPTTA LVVSQLLRIL  
=====

HITS AT: 166-199

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 137:108289

L4 ANSWER 21 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 442958-94-3 REGISTRY  
CN E1 protein (hepatitis C virus clone HCC/37 isoform) (9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN 22: PN: WO02055548 SEQID: 22 claimed protein  
CN E1 protein (hepatitis C virus clone HCC/37 hydrophobic region deletion mutant)  
CI MAN  
SQL 239

SEQ 1 MLGKVIDTLT CGFADLVGYI PLVGAPLGGA ARALAHGVRV LEDGVNYATG  
51 NLPGCSFSIF LLALLSCLTV PASAYEVRNV SGMVHTVND C SNSSIVYEAA  
101 DMIMHTPGCV PCVRENNSSR CWVALTPTLA ARNASVPTTT IRRHVDSQLF  
151 TISPRRHETV QDCNCSIYPG HITGHRMAWD MMMNWSPTTA LVVSQLLRIP  
=====

201 QAVVDMVAGA HWGVLAGLAY YSMVGNWAKV LIVMLLFAP  
HITS AT: 166-199

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 137:108289

L4 ANSWER 22 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 442958-83-0 REGISTRY  
CN E1 protein (hepatitis C virus clone HCC/10A) (9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN 6: PN: WO02055548 SEQID: 6 claimed protein  
CI MAN  
SQL 263

SEQ 1 MLGKVIDTLT CGFADLVGYI PLVGAPLGGA ARALAHGVRV LEDGVNYATG  
51 NLPGCSFSIF LLALLSCLTV PASAYEVRNV SGMVHTVND C SNSSIVYEAA  
101 DMIMHTPGCV PCVRENNSSR CWVALTPTLA ARNASVPTTT IRRHVDLLVG  
151 AAAFCSAMYV GDLCGSVFLV SQLFTISPRR HETVQDCNCS IYPGHITGHR  
=====

201 MAWDMMMNWS PTTALVVSQ L R I P Q A V V D M V A G A H W G V L A G L A Y Y S M V G N  
=====

251 WAKVLIVMLL FAP  
HITS AT: 190-223

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 137:108289

L4 ANSWER 23 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN

Searcher : Shears 571-272-2528

10/685435

RN 442958-78-3 REGISTRY  
CN El protein (hepatitis C virus clone HCC/9A) (9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN 4: PN: WO02055548 SEQID: 4 claimed protein  
CI MAN  
SQL 212

SEQ 1 MPGCSFSIFL LALLSCLTIP ASAYEVRNVS GMYHVTNDCS NSSIVYEAAD  
51 MIMHTPGCVP CVRENNSSRC WVALTPTLAA RNASVPTTTI RRHVDLLVGA  
101 AALCSAMYVG DLGGSVFLVS QLFTISPRRH ETVQDCNC SI YPGHITGHRM  
===== ==  
151 AWDMMMNWSP TTALVVSQLL RIPQAVVDMV AGAHWGVLAG LAYYSMVGNW  
===== ==  
201 AKVLIVMLLF AL  
HITS AT: 139-172

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 137:108289

L4 ANSWER 24 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 224570-67-6 REGISTRY  
CN L-Isoleucine, L-seryl-L-isoleucyl-L-tyrosyl-L-prolylglycyl-L-histidyl-L-isoleucyl-L-threonylglycyl-L-histidyl-L-arginyl-L-methionyl-L-alanyl-L-tryptophyl-L- $\alpha$ -aspartyl-L-methionyl-L-methionyl-L-methionyl-L-asparaginyL-L-tryptophyl-L-seryl-L-prolyl-L-threonyl-L-threonyl-L-alanyl-L-leucyl-L-valyl-L-valyl-L-seryl-L-glutaminyL-L-leucyl-L-leucyl-L-arginyl-(9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN 10: PN: WO9967285 TABLE: 4 unclaimed protein  
CN PN: EP947525 SEQID: 6 unclaimed protein  
CI MAN  
SQL 34

SEQ 1 SIYPGHITGH RMAWDMMNW SPTTALVVSQ LLRI  
===== ==  
HITS AT: 1-34

REFERENCE 1: 132:77608

REFERENCE 2: 131:270949

REFERENCE 3: 130:351222

L4 ANSWER 25 OF 25 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 147479-35-4 REGISTRY  
CN Protein (hepatitis C virus strain Japan envelope fragment reduced) (9CI) (CA INDEX NAME)  
CI MAN  
SQL 139

SEQ 1 TTQGCNC SIY PGHITGHRMA WDMMNWSPT TALVVSQLLR IPQAVMDMVA  
===== ==  
51 GAHWGVLAGL AYYSMVGNWA KVLIVMLLFA GVDGHTRV TG GVQGHVTSTL  
101 TSLFRPGASQ KIQLVNTNGS WHINRTALNC NDSLQTGF L  
HITS AT: 8-41

Searcher : Shears 571-272-2528

10/685435

REFERENCE 1: 119:242928

(FILE 'MEDLINE, BIOSIS, EMBASE' ENTERED AT 15:55:20 ON 12 NOV 2004)  
L5 0 S L3

FILE 'HOME' ENTERED AT 15:55:28 ON 12 NOV 2004

Searcher : Shears 571-272-2528